

What is claimed is:

1. A display device structure with compensating
2 electrodes, wherein the display device is
3 composed of a first substrate, a second
4 substrate and a liquid crystal layer formed
5 therebetween, a pixel composed of a plurality
6 of compensating electrodes is formed on the
7 first substrate, the pixel is comprised of a
8 plurality of first and second electrodes, a
9 insulating layer is disposed between the first
10 and the second electrodes, and each pixel
11 comprising:
12 a first sub-pixel, wherein the first sub-pixel is
13 divided into a first domain and a second
14 domain;
15 a second sub-pixel, wherein the second sub-pixel is
16 adjacent to the first sub-pixel and divided
17 into a third domain and a fourth domain; and
18 a third sub-pixel, wherein the third sub-pixel is
19 adjacent to the second sub-pixel and divided
20 into a fifth domain and a sixth domain;
21 wherein the first electrodes and the second
22 electrodes are parallel to each other in each
23 pixel, the first electrodes are below the
24 second electrodes in the first, fourth and
25 fifth domains, and the first electrodes are
26 over the second electrodes in the second,
27 third, and sixth domain.

1 2. The structure as claimed in claim 1, wherein
2 the third domain is adjacent to the first, fourth, and
3 fifth domains, and the third domain is diagonal to the
4 second and the sixth domains.

1 3. The structure as claimed in claim 1, wherein
2 the fourth domain is adjacent to the second, third, and
3 sixth domains, and the fourth domain is diagonal to the
4 first and the fifth domains.

1 4. The structure as claimed in claim 1, wherein
2 the first electrodes are first comb type electrodes, and
3 the second electrodes are second comb type electrodes.

1 5. The structure as claimed in claim 1, wherein
2 the first electrodes are formed of non-transparent
3 materials, and the non-transparent materials are Al or
4 MoW.

1 6. The structure as claimed in claim 1, wherein
2 the second electrodes are formed of transparent
3 materials, and the transparent materials are ITO or IZO.

1 7. A display device structure with compensating
2 electrodes, comprising:

3 a first substrate, wherein the first substrate
4 includes a first, second, third, and fourth
5 domains, arranged in a matrix, the first domain
6 and the second domain are parallel in the same
7 column, the third and the fourth domains are in
8 the same column, the first and the third

9 domains are in the same row, the second and the
10 fourth domains are in the same row;
11 a gate line, wherein the gate line extends along a
12 first direction on the first substrate;
13 a first data line, wherein the first data line
14 extends along a second direction on the first
15 substrate;
16 a plurality of TFTs, wherein the TFTs are disposed
17 on the matrix and connected to the first data
18 line and the gate line;
19 a plurality of first electrodes, wherein the first
20 electrodes are respectively formed in the
21 first, second, third and fourth domains, and
22 a plurality of second electrodes, wherein the second
23 electrodes are respectively formed in the
24 first, second, third and fourth domains;
25 wherein the second electrodes are electrically
26 connected to the TFTs;
27 wherein the first electrodes in the second and third
28 domains are respectively electrically connected
29 to the first electrodes in the fourth and first
30 domains,
31 wherein the positions of the first and second
32 electrodes are the same in the diagonal
33 domains, and the positions of the first and
34 second electrodes are reversed in the adjacent
35 domains.

36 8. The structure as claimed in claim 7, wherein
37 the first direction is perpendicular to the second
38 direction.

39 9. The structure as claimed in claim 7, wherein
40 the TFTs include a first TFT and a second TFT.

1 10. The structure as claimed in claim 9, wherein
2 the first TFT is on the left side of the intersection of
3 the gate line and the first data line connecting the
4 second electrodes in the first and the second domains,
5 and the second TFT is on the right side of the
6 intersection of the gate line and the first data line
7 connecting the second electrodes in the third and the
8 fourth domains.

9 11. The structure as claimed in claim 9, further
10 comprising a second data line extending along the second
11 direction on the first substrate.

12 12. The structure as claimed in claim 11, wherein
13 the first TFT is on the left side of the intersection of
14 the gate line and the first data line connecting the
15 second electrodes in the first and the second domains,
16 and the second TFT is on the left side of the
17 intersection of the gate line and the second data line
18 connecting the second electrodes in the third and the
19 fourth domains.

1 13. The structure as claimed in claim 11, wherein
2 the first TFT is on the right side of the intersection of
3 the gate line and the first data line connecting the

4 second electrodes in the first and the second domains,
5 and the second TFT is on the right side of the intersect
6 point of the gate line and the second data line
7 connecting the second electrodes in the third and the
8 fourth domains.

1 14. The structure as claimed in claim 9, wherein
2 the first electrodes in the first domain include a first
3 common line extending along the first direction, the
4 first electrodes in the fourth domain include a second
5 common line extending along the first direction, the
6 first electrodes in the first domain are connected to the
7 first electrodes in the third domain through the first
8 common line, and the first electrodes in the fourth
9 domain are connected to the first electrodes in the
10 second domain through the second common line.

1 15. The structure as claimed in claim 14, wherein
2 the second electrodes in the second domain are connected
3 to the first TFT through a first contact hole, and the
4 second electrodes in the third domain are connected to
5 the second TFT through a second contact hole.

1 16. The structure as claimed in claim 14, wherein
2 the first electrodes in the third domain are connected to
3 the first common line through a third contact hole, and
4 the first electrodes in the second domain are connected
5 to the second common line through a fourth contact hole.

1 17. The structure as claimed in claim 7, wherein
2 the first electrodes are first comb type electrodes, and
3 the second electrodes are second comb type electrodes.

1 18. The structure as claimed in claim 17, wherein

2 the first comb type electrodes in the first and
3 fourth domains include a plurality of branches extending
4 along a third direction;

5 the first comb type electrodes in the second and
6 third domains include a plurality of branches extending
7 along a fourth direction;

8 the second comp type electrodes in the first domain
9 include a first comb stem near the gate line and a
10 plurality of branches extending along the third direction
11 from the first comb stem;

12 the second comp type electrodes in the second domain
13 include a second comb stem near the gate line and a
14 plurality of branches extending along the fourth
15 direction from the second comb stem;

16 the second comp type electrodes in the third domain
17 include a third comb stem near the gate line and a
18 plurality of branches extending along the fourth
19 direction from the third comb stem;

20 the second comp type electrodes in the fourth domain
21 include a fourth comb stem near the gate line and a
22 plurality of branches extending along the third direction
23 from the fourth comb stem; and

24 the first comb type electrodes and the second comb
25 type electrodes are intersecting with each other.

1 19. The structure as claimed in claim 17, wherein
2 the third direction is the direction of clock-wise
3 rotation from the second direction at an angle between 5°
4 to 15°.

1 20. The structure as claimed in claim 17, wherein
2 the fourth direction is the direction of counter clock-
3 wise rotation from the second direction at an angle
4 between 5° to 15°.